UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

REPORT ON THE MOUNTAIN PINE BEETLE INFESTATION KOOTENAI NATIONAL FOREST 1925.

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Associate Entomologist.

Forest Insect Field Station,
Coeur d Alene, Idaho,
Nov. 3rd, 1925.

GOVERNMENT PRINTING OFFICE

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INTRODUCTION

Pursuant with the request of Forest Offices of District One, an examination of the Pete Creek drainage, Kootenai National Forest, was made on September 17th, 1925. The purpose of this examination was to determine the present status of the mountain pine beetle infestation in the white pine type and to establish its relation to the epidemic in the lodgepole pine stands on the West Fork of the Yaak River, a few miles further north.

Throughout this area practically every white pine tree had been severely injured by the sudden drop in temperature which occured in December 1924. A study of the climatological data for this region shows a drop in temperature of 98 degrees in 48 hours, or 59 degrees in 24 hours, occuring between December 14th and 16th. This injury which in this region was practically confined to the white pine has been placed in the following three classes:

1. Very slight browning of the tips of the needles.
2. Destruction of all the foliage with terminal buds uninjured.
3. Destruction of both the foliage and the terminal buds.

With the exception of a few terminals at the very top, and in some cases the leader only, many trees were examined which had produced no

1925 foliage whatever. Though the cambium of these trees still appeared to be in a healthy condition, it is believed that there will be a very high mortality of those within class three.

STATUS OF INFESTATION

This examination was not satisfactory as it was seriously complicated by the discoloration of the foliage which made the spending of further time in the area, as had been planned, useless. The trees with no 1925 foliage gave the appearance of having been attacked by the mountain pine beetle in 1924, while those with the new growth against a back ground of brown needles resemble the faded condition of the 1925 attack.

This unforseen condition made it impossible to determine the extent of the 1924 and 1925 loss by spotting the discolored foliage of the infested trees. To secure this data an extensive cruise of the region would have been necessary. In order to partially overcome this situation six miles of strip survey, two chains wide, were run and the 1924 and 1925 attacked trees counted. The results of this survey showed that there was one 1924 attacked tree to every 6.4 acres and one 1925 to 4.5 acres. These figures are questionable as one group of fifteen 1925 trees was recorded, which may have unbalanced the data secured. To determine the status of the brood development at this time, a square foot of bark was removed from the west side of 10 different trees, and the number of new attacks and the number of larvae counted.

Table Showing the relation of the number of larvae per square foot to the number of new attacks:

TREE #	DBH	NEW ATTACKS	LARVAE	PERCENT OF INCREASE
1	30	7	256	3560
2	26	5	190	3800
3	24	9	220	2420
4	24	6	189	3125
5	18	11	250	2272
6	24	8	265	3325
7	28	7	275	3925
8	30	12	225	1875
9	36	6	270	4500
10	30	10	225	2250

RELATION OF THE WHITE PINE AND LODGE-POLE PINE INFESTATIONS

The region lying between the head of Pete Creek and the West Fork of the Yaak River and the divide between Pete Creek and Garrer Creek, was covered. On the higher elevations along the Pete Creek divide the white pine type gives way to lodgepole. These two types appear rather well defined as there is practically no intermingling of species.

Along the West Fork of the Yaak River opposite the head of Pete Creek isolated infested Lodgepole were recorded which became more numerous towards the heavy infestation below the mouth of Garrer Creek. There is no physical connection between these two infestations although one could not say that the insects did not fly from one to the other. However, this is not believed to be the case and it is felt that the outbreak in the white pine is a local situation, which is a condition quite often found in over mature stands.

RECOMMENDATIONS FOR CONTROL

In the thoughts of control for this area it must be borne in mind that though there is apparently no connection between these two infestations at this time, no guarantee can be made that none will occur in the future. Though we have no records of the mountain pine beetle spreading from lodgepole pine to white pine, we have no assurance that it will not.

However, regardless of the above condition if the stumpage value of this timber justifies the expense it is recommended that control measures be instituted. This plan should be on at least a three year basis, with yearly observations following, and maintenance work when necessary. The control measures would consist in felling the trees and peeling the infested length. Though an attempt would be made to treat every infested tree, many would be missed which necessitates the adopting of this plan on a three year basis in order that a thorough clean up of the area can be made. It is estimated that two thousand dollars would be necessary to treat the 1925 attacked trees within this area. The work will no doubt be complicated somewhat due to the abnormal fading of the foliage which may necessitate an intensive survey in order to locate the infested trees.

The determination of the economics of this problem is not believed to be within the province of the Bureau of Entomology so the recommendations for control have been made contingent upon the stumpage value, merchantability of the stand, etc., which decision will of necessity rest upon the Forest Service.

No results are guaranteed, but from the work conducted in the Coeur d'Alene National Forest for the past two seasons it is believed that satisfactory results can be shown. Satisfactory to the extent that it is believed a saving of timber will be shown in proportion to the per cent of the infestation treated.

MEADOW CREEK EXAMINATION

An examination of the mountain pine beetle infestation in the white pine stands of Meadow Creek was made on September 18th. Contrary to the condition found within the Pete Creek Drainage there was very little injury to the white pine due to winter killing.

Though a large volume of white pine has been killed by the mountain pine beetle during the past 10 years very little new work was recorded and no 1925 attacks whatsoever. It is believed that this outbreak has subsided from an epidemic to a so called normal condition. However, this infestation should be followed very carefully in order that control measures could be instituted should an increase become apparent.

It is recommended that in the event of control work being instituted in the Pete Creek Region, this area be surveyed and all 1925 infested trees treated in conjunction with the other project. An additional five hundred dollars should be allotted to cover this project, making a total of twenty five hundred dollars for the control work on both Pete and Meadow Creeks in the spring of 1926.

Respectfully submitted,

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